SECTION 11177 - VERTICAL SUMP PUMPS

City of San Diego, CWP Guidelines

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

A. The WORK of this Section includes providing vertical sump pumps with above-floor motors and all appurtenant work.

1.2 RELATED SECTIONS

A. The WORK of the following Sections applies to the WORK of this Section. Other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of this WORK.

1. Section 11175 Pumps, General

PART 2 - PRODUCTS

2.1 PUMP NAME: [ ] (P-[ ] through P-[ ])

A. **General:** Vertical sump pumps shall conform to the following requirements:

1. Number of pumping units - [ ]
2. Location - [ ]
3. Service - [ ]
4. Operation (hours per day) - [ ]
5. Drive - Constant speed.

B. **Operating Conditions:**

1. Capacity (gpm) - [ ]
2. Pump head (TDH-ft) - [ ]
3. Liquid to be pumped - [ ]
4. Size of solids to pass (in.dia.) - [ ]
5. Specific gravity of liquid - [ ]
6. Liquid temperature (deg.F) - [ ]

7.	pH of liquid	-	[ ]
8.	Min pump efficiency at design point (percent)	-	[ ]
9.	Max pump speed (rpm)	-	[ ]
10.	Max motor speed (rpm)	-	[ ]
11.	Min motor size (hp)	-	[ ]

C. **Pump Dimensions:**

1.	Impeller diameter, min (in)	-	[ ]
2.	Discharge size, min (in)	-	[ ]
3.	Size of sump (in): Length	-	[ ]
	Width	-	[ ]
	Depth	-	[ ]

2.2 PUMP REQUIREMENTS

A. **Construction:** Construction of vertical sump pumps shall conform to the following requirements:

1.	Casing	-	Cast iron
2.	Impeller	-	Non-clog, cast iron
3.	Wear rings	-	[Bronze] [stainless steel]
4.	Pump shaft	-	Type 316 stainless steel
5.	Column pipe	-	Carbon steel
6.	Shaft bearings	-	Rubber, Teflon, or carbon bearings in cast iron housings, at maximum 5 feet on centers.
7.	Top bearing	-	Anti-friction bearing, with L-10 life of [50,000] [100,000] hours grease-lubricated
8.	Steady-bearing lubrication	-	Type 316 stainless steel pipe with grease fittings
9.	Shaft coupling	-	Heavy duty flexible spacer coupling
10.	Discharge pipe	-	Carbon steel
11.	Motor frame	-	Cast iron

12. Baseplate - Heavy steel or cast iron

13. Sump Cover and Frame - Heavy steel [with flanged access manhole]

B. **Drive:** Vertical, heavy duty, electric motor suitable for [ ]-volt, [ ]-phase, 60-Hz ac power supply, complying with Section 16040.

2.3 CONTROLS

A. The WORK of this Section includes providing a complete control system housed in a wall or pedestal mounted enclosure as indicated, to include the following for each pump:

1. Magnetic starter

2. Disconnect switch

3. Hand-Off-Remote setting

[4. On-Off switch at remote location]

5. Pilot lights

6. Low water alarm with contact and bell

[7. Electric alternator]

8. Level control float or mercury switches

9. Alarm reset switch

10. Intrinsically safe switches shall include submersible, sealed cables and stainless steel wall brackets

11. Dry contacts for remote alarm indication

12. Control and status module by the pump manufacturer

2.4 SPARE PARTS

A. The following spare parts shall be provided for each pump:

1. 2 sets all gaskets and O-rings
2. 2 sets all bearings

B. Spare parts shall be packaged and boxed as indicated in Section 11000.

2.5 MANUFACTURERS

A. Products shall be manufactured by one of the following (or equal):

1. Aurora, model [ ]
2. Crane, Deming, model [4500]
3. Goulds Pumps, model [3184]
4. Pacific Pumping Company, model [ ]

PART 3 - EXECUTION

3.1 INSTALLATION

A. Pumping equipment shall be installed in accordance with the shop drawings and as indicated.

B. General installation requirements shall comply with Section 11175.

** END OF SECTION **